REAL ESTATE PLAN
G I STUDY, FEASIBILITY PHASE
COLUMBIA RIVER CHANNEL IMPROVEMENT STUDY
COLUMBIA AND LOWER WILLAMETTE RIVERS
NAVIGATION CHANNEL, OREGON AND WASHINGTON

Purpose - The purpose of this report is to identify an overall plan which describes the real estate requirements needed for the construction, operation and maintenance of the recommended improvements to the authorized Columbia and Lower Willamette Rivers navigation channel in Oregon and Washington. This Real Estate Plan (REP) is a work product of the Columbia River Channel Improvement Study which was authorized by a resolution of the U.S. House of Representatives, Committee on Public Works and Transportation, adopted August 3, 1989. Specific guidance for conduct of this feasibility study was provided in the Energy and Water Appropriation Act of Fiscal Year 1994, Public Law 103-126, as well as a meeting held on September 22, 1994 between the Acting Assistant Secretary of the Army for Civil Works [ASA(CW)] and the Corps. The Corps received guidance limiting the scope of the feasibility study to channel depths no greater than 43 feet, as desired by the sponsors. In addition, Corps headquarters directed that a separate report, Dredged Material Management Plan (DMMP, 1998), would serve as the without-project condition for this study. The DMMP report evaluated the most efficient way to maintain the existing authorized 40-foot navigation channel in the future.

General Study Area / Existing Project Description - The study area is defined by the Columbia and Lower Willamette Rivers Federal navigation channel which covers the lower 14.6 miles of the Willamette River below downtown section of Portland, Oregon, and 103.5 miles of the Columbia River below Vancouver, Washington (See Exhibit A). The vast majority of this lower Columbia River region is dominated by both riparian and upland forests which are intermingled with dike protected farmland. There are scattered urban/industrial areas that are interspersed among the forested areas and farmlands. Most of these urban/industrial areas are located within the upstream half the of study area. The Willamette River portion of the subject navigation channel project is located entirely within the Portland Oregon Metropolitan Area, and the Willamette segment included in the study extends from the Broadway Bridge in Portland, Oregon, at Willamette River Mile (WRM) 11.6 downstream to its confluence with the Columbia River (WRM 0). The Columbia River segment of the study extends from the Interstate 5 Highway Bridge at Columbia River Mile (CRM) 106.5 downstream to near the mouth of the Columbia River (CRM 3.0.). This 103.5 mile segment of the Columbia River serves to form the state boundary line between the states of Washington and Oregon and the Interstate 5 Highway Bridge is one of the two highway bridges which serve to connect the cities of Vancouver, Washington and Portland, Oregon.

The existing Columbia and Lower Willamette Rivers Federal navigation channel project as currently authorization (modified by Congress in the 1962 Omnibus Bill for Rivers and Harbors, Public Law 87-874, October 23, 1962) covers the lower 14.6 miles of the Willamette River below Portland, Oregon and 103.5 miles of the Columbia River below Vancouver, Washington. The initial construction work for the existing authorized 40-foot deep navigation channel was completed in 1976 and most of the channel is maintained to a 40 foot depth and 600 foot width. The Willamette River channel, from Broadway Bridge (WRM 11.6) to mouth (WRM 0), actually varies in channel width from 600 to 1,900 feet. As for the Columbia River channel, the existing navigation project provides a 35 feet deep and 500 feet wide channel from Interstate 5 bridge at the upstream end of the project to the Burlington-Northern Railroad bridge (CRM 106.5 to 105.5). The Columbia River channel for the 4 miles between the mouth of the Willamette River and the Burlington-Northern Railroad bridge at Vancouver is currently being maintained to a 40 foot depth and 500 foot width until the need for a wider channel is demonstrated. The remaining portion of the Columbia River channel from the confluence of the Willamette and Columbia Rivers (CRM101.5) to a point near the mouth of the Columbia River (CRM 3.0) is maintained to a 40 foot depth and a 600 foot width. In conjunction with the above described navigation channel, existing turning basins on the Columbia River are provided at Vancouver, Kalama, and Longview in Washington, and at Astoria in Oregon. The subject navigation project also includes 30-foot deep and 24-foot deep auxiliary channels which branch off from the Columbia River navigation channel at St. Helens (CRM 87) Oregon and Rainier (CRM 68) Oregon , respectively.

At Portland, Oregon, there are six Port of Portland terminals consisting of 43 berths equipped to handle general cargo, bulk cargo, lumber, automobiles, lift-on-lift-off and roll-on-roll-off containers, and bulkhead vessels. The Port of Portland owns and operates a major ship repair yard, which is the west coast's largest, and the world's third largest floating dry dock. Also available in the harbor area are privately operated facilities for receiving, storing, and out-loading petroleum, wood chips, grain, logs, sand and gravel, cement, and steel products.

At Vancouver, Washington, there are municipal facilities capable of berthing five ships simultaneously. Each berth is completely outfitted with mechanical and lift facilities for receiving and handling all types of cargo. The port has a low dock to handle roll-on-roll-off and side-port discharging vessels. The grain terminal has a total capacity of 5,000,000 bushels.

The Port of Kalama, which is located at Kalama, Washington, has two existing berthing areas, one port-owned and one private. The Port of Longview, at Longview, Washington, has a public terminal on the Columbia River and a privately owned grain elevator with a capacity of 6,400,000 bushels. The Port of Longview also has a heavy lift facility with a capacity of 600 tons. At Astoria, Oregon, there is a single terminal with facilities for receiving and handling all types of general cargo. At other locations between Portland and the mouth of the Columbia River, there are numerous private facilities which are structured to accommodate the smaller river vessels and fishing craft.

History of Pertinent Federal Projects - The Columbia and Lower Willamette Rivers navigation project was first authorized in 1878, and the channel has been deepened at intervals since that time. The project was originally constructed to a 20-foot minimum depth. The navigation depth was increased to 25 feet in 1899 and to 30 feet deep by 300 feet wide in 1912. Between 1930 and 1935, the navigation channel was again increased to 35 feet deep by 500 feet wide. The current channel, which was authorized in 1962 and completed in 1976, is generally 40 feet deep and 600 feet wide . The channel has been maintained using a combination of dredging and hydraulic control works, such as pile dikes. Prior to construction of the 30-foot channel in 1912, dredging was limited to a few very shallow reaches of the river where the natural controlling depths were in the 12-foot to 15-foot range. From 1912 to 1935, the channel was deepened to 35 feet by 500 feet wide and realigned at many reaches. It was also during this time that many hydraulic control structures were built and increased dredging became necessary to maintain the authorized channel. From 1936 to 1957, channel alignment adjustments were made that added to the dredging requirements. During this period, dredging averaged 6.7 million cubic yards (MCY) per year. By 1958, the channel alignment had stabilized but dredging was augmented to increase the depth of advance maintenance dredging from 2 to 5 feet to allow the navigation channel to shoal during the year and still provide full project dimensions.

The currently existing 40 feet deep and 600 feet wide navigation channel was constructed in stages between 1964 and 1976. Its alignment generally follows the deepest part of each river. The majority of the aligned navigation channel is naturally deeper than the required 40 foot depth. Active shoaling tends to occur in channel reaches where the natural depth was less than 40 feet. Since 1976, maintenance dredging for the project has averaged approximately 5.5 mcy per year, after making adjustments for emergency dredging related to the 1980 volcanic eruption of Mount St. Helens. Although there is ample evidence of the historic use of upland disposal sites for dredged material along most reaches of the channel, the majority of the normal maintenance dredging over the last 20 years has been accomplished by utilizing varied forms of in-water disposal. The most recent historic annual dredge quantities exemplify the use of these in-water disposal options and are shown as follows: shoreline disposal option (shallow water and beach areas) represents about 1 MCY annually, flowlane disposal option (in or adjacent to the channel in depths from 35 to 65 feet) represent about 3.5 MCY annually and lastly upland disposal option represents about 0.75 MCY annually.

The current local sponsors for the existing 40-foot Federal navigation channel project include the Port of Portland in Oregon, and the ports of Vancouver, Woodland, Kalama and Longview in Washington along with the State of Washington, acting through its Department of Natural Resources (DNR) and Wahkiakum County, Washington. With the exception of Wahkiakum County, each of the identified non-Federal sponsors was an original sponsor of the 40-foot channel project and have complied with the requirements of the Flood Control Act of 1936, Public Law 74-738, by giving formal assurances that they will provide the following items of local cooperation:

(a) Provide without cost to the United States all lands, easements, and rights-of-way required for the construction and subsequent maintenance of the project and of aids to navigation upon request of the Chief of Engineers to be required in the general public interest for initial and subsequent disposal of spoil and necessary retaining dikes, bulkheads, and embankments therefor or the costs of such retaining works;

(b) Hold and save the United States free from damages due to the construction and maintenance of the works;

(c) Provide and maintain at local expense adequate public terminal and transfer facilities open to all on equal terms;

(d) Accomplish without cost to the United States such alterations as are required in sewer, water-supply, drainage, and other utility facilities for construction and maintenance of the project; and

(e) Provide and maintain, without cost to the United States, depths in berthing areas and local access channels serving the terminals, including the 50-foot strip adjacent to pierhead lines, commensurate with the depths provided in the related project areas.

Wahkiakum County, Washington, joined the sponsorship group for the 40-foot Federal navigation channel project in 1993. Because Section 221 of the Flood Control Act of 1970 required written agreements between the United States and local sponsors of water resource projects which are enforceable in the appropriate U. S. District Court, and as construction of the 40-foot channel project was 100% Federally funded; a contractual form of agreement unique to the existing project was drafted. Simply put, the agreement as written is between the Department of the Army and Wahkiakum County, wherein the county contractually agrees to the above cited items of formal assurances.

Although no permanent project use of any upland dredge material disposal site has been provided for the existing 40-foot navigation channel project, over the life of the project the local sponsors have individually provided the Corps with temporary - short term use of a number of upland disposal sites. Many of the historically used upland disposal sites are either sponsor-owned sites or island sites which are state-owned and under a specific state agency jurisdiction. For those state-owned and private party owned disposal sites, the local sponsors have historically secured their use through short term right-of-entry permits. Most of these right-of-entry permits have been secured for no-cost from the landowners, with only local sponsor administrative costs invested. A limited number of right-of-entry permits are still in effect and as previously noted, majority of maintenance dredging over last 20 years has been accomplished by use of in-water disposal options.

The Dredge Material Management Plan (DMMP, 1998), which is currently scheduled for a record-of-decision in September 1998, evaluated the most efficient ways to maintain the existing authorized 40-foot navigation channel in the future (next 20 years). The DMMP report, as currently drafted, cites acquisition of long-term real property interests in upland dredge material disposal sites as a need for maintenance of the 40-foot navigation project. This represents a significant change in the historic way the local sponsors have secured the use of upland disposal sites and brings into question LERRD crediting issues for potential upland dredge material disposal sites required for project improvements that are the subject of the Columbia River Channel Improvement Study. This issue was brought to light at Corps In-Progress Review (IPR) held in Portland, Oregon, 16-17 March 1998. The IPR was a scheduled activity for the Columbia River Channel Improvement Study and guidance on this and other issues were subsequently provided by Corps headquarters (CECW-PE) in a memorandum dated 6 May 1998. Regarding this particular issue for the subject study, a Corps position was established "The non-Federal sponsor will be given a pro-rated share of the value of LERRD for the disposal sites needed for operation and maintenance of the existing 40-foot project DMMP if the sites will also be needed for disposal facilities for construction and subsequent operation and maintenance of the new project. The pro-rated value will be based on the actual proportionate use of disposal site capacity for maintenance of the existing project under the DMMP (prior to construction of a new project) versus the project capacity that would be used for the construction, maintenance and operation of the new project. All additional sites not part of the DMMP will be treated as never previously provided, and will be credited accordingly." The above guidance is used in development of this REP and LERRD credit is therefore allowed for all identified upland disposal sites required for the construction, operation and maintenance of the new project, regardless if previously provided as a disposal site.

Disposal Alternative Plans for Recommended Plan - The conclusion reached by the Columbia River Channel Improvement Study regarding recommended improvements to the authorized Columbia and Lower Willamette Rivers navigation channel in Oregon and Washington entails deepening the existing channel to a 43-foot depth for virtually all of the navigation channels currently authorized length. The width of the existing navigation channel was left unchanged. The implementation of the 43-foot channel improvement alternative would require dredging and disposal of dredge material for the construction and maintenance of the new project. Construction alone of the 43-foot channel would require the dredging of an estimated 18.7 MCY of river sediment from the navigation channel, removal of 255,000 cubic yards of hard basalt rock, and removal of 246,000 cubic yards of cemented sand, gravel and boulders. The subject study also includes the associated maintenance dredging forecast for the first 20-year period which reflects a cumulative dredging volume in the range of 90 MCY. The study concludes construction as well as maintenance dredging would be done by hopper and pipeline dredges. For study management purposes the Columbia River segment of the navigation channel has been divided into 7 river reaches and references to such are found on maps and exhibits contained within the REP.

The study's development of alternatives for disposal of the approximately 110 MCY of dredged material focused on the suitability of upland, shoreline, flowlane and ocean disposal site options. All of these disposal methods, except ocean disposal, are currently used to some degree for maintenance of the existing 40-foot navigation channel. The suitability, nature and availability of disposal sites determined which dredging practices would be considered for specific locations. The study's initial disposal site screening list included 157 potential disposal sites and was developed based on the 25 sites addressed in previous EA's for Columbia River maintenance dredging, the 1991 Columbia River Maintenance Disposal Plan, and Corps staff determinations (note in-water flowlane option in or adjacent to the channel was counted as one site for entire length of river). The initial disposal site option list was refined by applying selected environmental and engineering criteria and eventually disposal options were screened based on estimated total cost criteria which included the associated environmental mitigation costs. By applying the various criteria, a least cost disposal alternative was developed which provides disposal capacity adequate for the construction and first 20 years of maintenance dredging for the 43-foot channel improvement alternative. The real estate requirements needed for implementation of this least cost disposal alternative are a primary subject of this REP.

A second alternative plan for the disposal of the approximately 110 MCY of dredge material identified in conjunction with the 43-foot channel improvement alternative is presented in the subject study. This second alternative is identified as the sponsor's preferred disposal alternative. The sponsoring port's developed this second disposal plan, which is an adaptation from the least cost disposal plan, wherein the ports applied the following additional selection criteria guidelines: utilize Columbia River sand for port purposes and other beneficial uses, substitute transportation costs for environmental costs, minimize land acquisition costs and enhance feasibility by avoiding controversial sites. In developing the sponsor's preferred disposal plan, the ports were willing to incur some additional project cost to satisfy the additional selection guidelines. Disposal alternatives considered by the sponsoring ports included double-handling dredge material to dispose of it in fewer but larger disposal sites; maximize use of sponsor-owned property; and use of existing sand and gravel mining operations. The resulting sponsor's preferred disposal alternative is in actually quite similar to the least cost alternative as both plans identify the same in-water sites and both plans identify 33 upland disposal sites. The sponsor's preferred disposal plan does identify 7 alternate upland disposal sites. The real estate requirements needed for implementation of the sponsor's preferred disposal alternative will also be presented in this REP to allow for comparison.

Both of the above identified disposal alternative plans reflect some potential use of dredged material by the sponsoring ports and corresponding LERRD crediting issues for the subject study thereby arose. These issues were identified at the Corps In-Progress Review (IPR) held in Portland, Oregon, on 16-17 March 1998. As previously mentioned, the IPR was a scheduled activity for the Columbia River Channel Improvement Study and guidance on this and other issues were subsequently provided by Corps headquarters (CECW-PE) in a memorandum dated 6 May 1998. Regarding this particular issue for the subject study, the following Corps' position was established "... Where dredge material is placed on port property it will be placed in a

confined disposal area. The Port would receive credit against the 10 percent additional share for the value of the LERRD needed for the disposal facility. Dredged material from the disposal facility would be available for subsequent use by the port in port development. We have determined there is no 'land enhancement' benefit under these circumstances but that the port is receiving some value from use of the dredged material. The value is the avoided cost of obtaining fill material from an alternative source. However, the cost sharing implications of the use of the dredge material are much more complex since the port, as the non-Federal sponsor, would have shared in the costs of dredging and transportation for new work dredging and in the costs of disposal facilities. It is proposed that where disposal facilities are located on port property, the disposal facility operations, maintenance and management be accomplished at non-Federal costs without reimbursement. In other words the ports will operate, maintain, and manage the disposal facilities in exchange for the opportunity to beneficially use the dredge material"

A second somewhat related cost share issue was also identified at the aforementioned IPR. This other issue regards the potential sale of dredged material from disposal areas by the non-Federal sponsors. Specific to this particular issue for the subject study, the following Corps' position was established; "It is proposed that when the non-Federal sponsor sells material from the disposal facility, the proceeds from the sale, less any state royalties, be deducted from the Federal payment for operation, maintenance and management of the disposal facilities." The above cited guidance regarding both issues is used in development
of this REP and should be reflected in the project's local cooperation requirements.

Real Estate Requirements for Least Cost Disposal Alternative - The study's identified least cost disposal alternative utilizes a combination of in-water and upland dredge material disposal sites (See Exhibit B). The study also recognizes that both the dredging and the projected use of the identified disposal sites will cause environmental impacts which will require associated environmental mitigation actions. The identified real estate requirements for environmental mitigation actions that are associated with least cost disposal alternative are discussed separately at the conclusion of this section, as they will be part of a separate contract action

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The least cost disposal alternative involves a variety of in-water disposal actions. It is anticipated that 1 ocean disposal site will be identified which handles both construction and maintenance dredging volumes. Along the Columbia River segment two shoreline disposal sites have been identified (O-23.5 & O-86.2 beach nourishment/upland sites) together with a number of specific in-water fills (sumps), and flowlane disposal options occur along the entire length of the existing navigation channel. The flowlane disposal would generally occur at river locations with water depths of 50 to 60 feet, with several exceptions which are noted in the main body of the feasibility report. Within the Willamette River segment of the study two in-water flowlane disposal sites have been identified WRKE-1 (82 acres) and WRKE-2 (38 acres). The use of both ocean and river beds for all in-water disposal options, together with all project required dredging activities will be accomplished by exercising the rights of Navigation Servitude.

The least cost disposal alternative also utilizes 33 upland disposal sites (within REP the two identified beach nourishment sites, O-23.5 & O-86.2, are also recognized as upland sites due to their composition as fluctuating upland acreage). These 33 upland sites will require a total real property right-of-way commitment estimated at 2,340 acres, of which approximately 2,065 acres are identified to receive actual dredge material placement (See Exhibit C). All but five of the 33 identified upland disposal sites will be required for the construction phase of the project which is scheduled for a two year time period - 2002 through 2003. The five upland sites that are not needed for the construction phase are Sites W-96.5, O-34.0, O-27.2, O-23.5 and O-21.0. The 33 upland disposal sites are referenced throughout this REP first by an abbreviation for the state in which located (W for Washington, O for Oregon) then by the adjacent Columbia River Mile reference.

One of the cornerstones in the methodology behind disposal site selection/design for the least cost disposal alternative was to maximize the use of those upland acres disposed on so as to minimize project's overall footprint within the study area and thereby minimize the impacts to wetlands and wildlife habitat, to the extent practicable. The maximization of use of identified upland disposal sites for both construction and first 20-year maintenance period led to a study decision that generally either "fee title" or "long term lease/temporary easement" would be the minimal interest required to support the subject navigation project. This decision identifying the appropriate real property interests to be acquired by the local sponsor in the provision of upland disposal sites used for construction and maintenance dredging is not totally consistent with the general guidance provided in ER 405-1-12, Chapter 12, Section II, Sub-section 12-9, and special approval from HQUSACE (CERE-AP) will be required. The least cost disposal alternative identifies fee title interest for 1,062 acres (11 upland sites), 7-year to 20-year long term leases/temporary easements for 1,075.5 acres (17 upland sites) and 1-year to 5-year short term leases/temporary easements for 202.5 acres (5 upland sites). It should be noted, one of the aspects in particular that led to the identification of long term lease/temporary easement interests as appropriate for certain upland disposal sites is the large number of identified sites under state ownership and the difficulty either state has with the sale of state lands versus the ease with which state agencies can enter into long term lease/temporary easement contracts. Copies of the identified real property estates and temporary easement/lease agreements have been included in Exhibit D.

The 2,340 acres of identified project ROW required for the 33 upland disposal sites in the least cost disposal alternative are contained within 46 separate tracts that involve 29 separate and distinct ownerships. Three of the Lower Columbia River ports, which are among the non-Federal sponsors of the proposed project, own fee title interest in 290 acres of required project ROW. The fee interest owned by the ports is more than sufficient for the identified project ROW requirements and the lands are available. The three Lower Columbia River ports include the Port of Portland, Port of St. Helens and Port of Woodland. Approximately 1,003.5 acres of additional project ROW is currently in public ownership and is owned by either State of Washington (Department of Natural Resources - DNR), the State of Oregon (Division of State Lands - DSL or Oregon Department and Fish & Wildlife - ODF&W), City of St. Helens, or Columbia County, Oregon. The remaining 1,046.5 acres of required project ROW is in private ownership which is dispersed between business corporations, family

trusts and private individuals. None of the 2,340 acres of identified project ROW are Federally owned, however, approximately 450 acres of the identified State of Oregon ownership lies within the boundaries of Lewis and Clark National Wildlife Refuge and currently 224 of those acres are under lease to U. S. Fish and Wildlife Service. All of the above mentioned State of Oregon ownership in the refuge has recently been in use as disposal sites for maintenance dredging of existing 40-foot navigation channel and its continued use does not appear to be in conflict with refuge activities.

The identified real estate requirements for environmental mitigation actions associated with the least cost disposal alternative require a total right-of-way commitment of 1,082 acres (See Exhibit E). The identified acreage is located in 5 upland sites which are referenced by the following names: Joslin Property, Sauvie 94, Woodland Bottoms, Martin Island and Webb Drainage District. The acquisition of "fee title" interest is the minimal real property interest required to support the project and the sites will be acquired by the local sponsor. All sites are needed for the construction phase of the project as construction of mitigation features, although under a separate contract, are scheduled simultaneous with construction of navigation features. The 5 identified upland mitigation sites constitute 8 separate tracts that involve 7 separate and distinct private party ownerships.

Real Estate Requirements for Sponsor's Preferred Disposal Alternative - The study's identified sponsor's preferred disposal alternative utilizes a combination of in-water and upland dredge material disposal sites, most of which are in common with the least cost alternative (7 alternate upland disposal sites are identified). The dredging is naturally the same for both alternatives and together with the projected use of the identified disposal sites will cause its own set of environmental impacts which will require associated environmental mitigation actions. The identified real estate requirements for environmental mitigation actions that are associated with the sponsor's preferred disposal alternative are discussed separately at the conclusion of this section, as they will be part of a separate contract action.

The sponsor's preferred disposal alternative involves a variety of in-water disposal actions, all of which are the same as those described for the least cost disposal alternative. The same amount of dredged material is also identified for in-water disposal. Please refer to the last paragraph on page 7 of this REP for a complete description.

The sponsor's preferred disposal alternative also utilizes 33 upland disposal sites (again, the two identified beach nourishment sites, O-23.5 & O-86.2, are also recognized as upland sites due to their composition as fluctuating upland acreage). The 33 upland disposal sites will require a total real property right-of-way commitment estimated at 2,285 acres, of which about 1,945 acres are identified to receive actual dredge material placement (See Exhibit F). All but four of the 33 upland disposal sites will be required for the construction phase of the project which is scheduled for a two year time period - 2002 through 2003. The four upland sites that are not needed during the construction phase are Sites O-34.0, O-27.2, O-23.5 and O-21.0. These four sites are identified as receiving only maintenance dredging quantities, although three of the four are scheduled for use starting in 2004 with continued use through 2021.

As commonly shared with the least cost disposal alternative, a cornerstone in the methodology behind disposal site selection/design for sponsor's preferred disposal alternative is to maximize the use of most of the upland acres disposed on so as to minimize project's overall footprint in the study area and thereby minimize the impacts to wetlands and wildlife habitat, to the extent practicable. The maximization of use of identified upland disposal sites for both construction and first 20-year maintenance period led to a study decision that for most sites either "fee title" or "long term lease/temporary easement" would be the minimal interest required to support the subject navigation project. The sponsor's disposal alternative for the most part avoids fee title acquisition in support of the subject project and favors long term lease/temporary easement interests. As previously mentioned, the study decision identifying appropriate real property interests to be acquired by the local sponsor in the provision of those upland disposal sites used for both the construction and maintenance dredging is not totally consistent with the general guidance provided in ER 405-1-12, Chapter 12, Section II, Sub-section 12-9, and as previously stated special approval from HQUSACE (CERE-AP) will be required. The sponsor's preferred disposal alternative identifies fee title interest for 303.5 acres (4 upland sites), 7-year to 20-year long term leases/temporary easements for 1,870.5 acres (25 upland sites) and 1-year to 5-year short term leases/temporary easements for 111.0 acres (4 upland sites). Again it should be noted, one of the aspects in particular that led to the identification of long term lease/temporary easement interests as appropriate for certain upland disposal sites is the large number of identified sites under state ownership and the difficulty either state has with sale of state lands versus the ease with which state agencies can enter into long term lease/easement contracts.

The 2,285 acres of identified project ROW required for the 33 upland disposal sites in the sponsor's preferred disposal alternative constitute 50 separate tracts that involve 34 separate and distinct ownerships. Five of the Lower Columbia River ports, which are among the non-Federal sponsors of the proposed project, own fee title interest in 423.5 acres of required project ROW. The fee interest owned by the ports is more than sufficient for the identified project ROW requirements and the lands are available. The five Lower Columbia River ports include the Port of Portland, Port of Vanvouver, Port of St. Helens, Port of Kalama, and Port of Woodland. Approximately 1,003.5 acres of additional project ROW is currently in public ownership and is owned by either the City of St. Helens, Columbia County, Oregon, State of Washington (Department of Natural Resources - DNR) and State of Oregon (Division of State Lands - DSL or Oregon Department of Fish and wildlife - ODF&W). The remaining 858 acres of required project ROW is in private ownership which is dispersed between business corporations, family trusts and private individuals. None of the 2,285 acres of identified project ROW are Federally owned, however, approximately 450 acres of the identified State of Oregon ownership lies within the boundaries of Lewis and Clark National Wildlife Refuge and currently 224 of those acres are under lease to U. S. Fish and Wildlife Service. All the above mentioned State of Oregon ownership in the refuge has recently been in use as disposal sites for maintenance dredging of existing 40-foot navigation channel and its continued use does not appear to be in conflict with refuge activities.

The identified real estate requirements for environmental mitigation actions associated with sponsor's preferred disposal alternative require a total right-of-way commitment of 754.5 acres (See Exhibit E). The identified acreage is located in 3 upland sites which are referenced by the following names: Woodland Bottoms, Martin Island and Webb Drainage District. The acquisition of "fee title" interest is the minimal interest required to support the subject project feature and the sites will be acquired by the local sponsor. All sites are needed for the construction phase of the project as construction of mitigation features, although under a separate contract, are scheduled simultaneous with the construction of navigation features. The 3 identified upland mitigation sites constitute 6 separate tracts that involve 6 separate and distinct private party ownerships.

Public Facility & Utility Relocations - An analysis of the existing utilities crossing of the Columbia River (CRM 0 to CRM 105.5) and the Willamette River (WRM 0 to WRM 11) was undertaken as a work product of the Columbia River Channel Improvement Study. The purpose of the analysis was to determine impacts from lowering the Columbia and Lower Willamette Rivers navigation channel from the existing 40-foot depth to a 43-foot depth (48-foot depth and 45-foot depth over-excavation along the lower Columbia River and the Willamette River respectively). The analysis identified those sections of the rivers which would actually require dredging in order to construct a 43-foot navigation channel. The analysis then utilized the following available information to determine impacts to utility crossings: review of available regulatory permits, review of cable and pipeline crossings referenced in the Columbia River Maintenance Disposal Plan, September 1991, and phone interviews with utility owners. In its summary the analysis identified 14 utility crossings on the Columbia River where dredging would be required, with 5 of those identified as being potentially impacted. The analysis also identified 15 utility crossings on the Willamette River segment, with 10 of those identified as being potentially impacted. Data tables are included within the utility analysis which identify the location of the utility crossing, name of utility owner and description of the utility. Please refer to the utility analysis section contained in the Engineering Appendix of the feasibility report for information specific to each utility crossing. A generalized summary statement was made in the analysis that the identified submarine cables and pipelines were constructed under issued Department of Army permits and that the owners of the affected utilities are obligated to relocate their utilities at their own expense in accordance with the terms of the permits.

The model Project Cooperation Agreement for Commercial Navigation Harbor Projects and Separable Elements assigns the local sponsor the responsibility to ensure the performance of all relocations identified as necessary for the project. At this time no individual engineering analysis has been initiated regarding the affected utility crossings so as to determine if and what type of relocation activity is required and if all relocation activities would be confined to existing rights-of-way or if additional right-of-way is required. It should also be noted, currently no Attorney's Opinion of Compensability are prepared regarding any relocation determinations. It should also be stated that no public facility relocations have been identified as part of the recommended improvement plan. Based on all the above, no real estate costs associated with facility or utility relocations are included in the Baseline Cost Estimate.

Hazardous, Toxic, and Radiological Waste Issues - An analysis of both river sediment quality together with screening disposal and mitigation sites for potential contamination issues was undertaken as work products of the Columbia River Channel Improvement Study. The analysis concluded that sediments in the Columbia River portion of the navigation channel are primarily sand with very low percent organic content and suitable, based on EPA and Corps criteria, for in-water and/or upland disposal. The material currently dredged for maintenance of the Willamette River segment of the navigation channel was also been found to be suitable for unconfined in-water disposal. However, some material in the Willamette River which has not been recently dredged was found potentially unsuitable for unconfined disposal. Sites of concern specifically mentioned included the east side of the navigation channel at WRM 10.3 and a small area downstream of Broadway Bridge at WRM 11.6. Suggested disposal options for contaminated sediments include contained upland disposal and capped in-water disposal, however, at this time no such sites are identified as part of the feasibility study. Based on final project design (PED Phase), it is expected additional testing and evaluation would be performed along Willamette River segment of the navigation channel.

Preliminary assessment screenings (PASs) were conducted for most of the disposal and mitigation sites proposed in each disposal alternative. Those sites not evaluated include disposal sites W-44.0, W- 96.5 and W-95.7 together with Joslin and Webb Drainage District mitigation sites. Please reference Appendix E, HTRW Preliminary Assessment Screening Survey, of the feasibility report for those completed assessment screenings for disposal and mitigation sites. To summarize the findings, 15 of the surveyed upland disposal sites and 2 surveyed mitigation sites were identified for follow up actions to be completed during the PED phase of the project, together with the unevaluated sites; however, none of the sites surveyed indicated any significant HTRW issues which would automatically preclude their use for material disposal or mitigation features. It should also be noted that all disposal and mitigation site real property values estimated for inclusion in the Baseline Cost Estimate were valued as if uncontaminated by HTRW materials.

The model Project Cooperation Agreement for Commercial Navigation Harbor Projects and Separable Elements goes into great detail discussing project procedures for dealing with hazardous substances. Please reference Article XV of the model agreement. To summarize procedures highpoints, upon execution of the PCA the local sponsor is responsible to ensure the performance of any necessary investigations of hazardous substances found within required project right-of-way. All costs incurred by either the local sponsor or the Government for such during the period of construction are included in the total cost of construction of the general navigation features and cost shared in accordance with the provisions of PCA. If any cleanup of hazardous materials is undertaken in conjunction with the project, the cost of cleanup and response, including study cost to determine appropriate response to contamination are a local sponsor responsibility.

Mineral Activity in Study Area - There are no known mineral deposits that have commercial value within the subject area other than sand, river gravel and stone mining operations. There are several operating open-pit quarries in the lower Columbia River basin and acreages in two of these quarries have been identified in the sponsor's preferred disposal alternative as upland disposal sites. The sites are O-80.0, Morse Brothers Pit and O-91.5, Lone Star NW Pit. Both of these identified disposal sites are located within portions of the quarries which have either been previously mined out and/or are not part of current mining operation. Another identified upland disposal site which is common to both disposal alternatives is part of an operating sand and gravel mining operation. This upland disposal site is W-97.1, Fazio Sand & Gravel. The use of these commercially operating quarry/sand & gravel businesses for upland disposal sites and appropriate LERRD crediting is an issue that was identified at Corps In-Progress Review (IPR) held in Portland, Oregon, 16-17 March 1998. As previously mentioned, this IPR was a scheduled activity for the Columbia River Channel Improvement Study and guidance on this and other issues were then subsequently provided by Corps headquarters (CECW-PE) in a memorandum dated 6 May 1998. Regarding this particular issue for the subject study, a Corps' position was established "For each site it is proposed that LERRD credit be limited to the actual costs to the local sponsor for real property interests provided." The above guidance is used in the development of this REP and after consultation with the local sponsor it was agreed that based on past experiences, local sponsor's administrative costs are the only likely actual costs that will be incurred in providing these sites. Therefore, for the identified disposal sites and for two other industrial re-handle sites (W-63.5 and W-67.5) the total estimated real estate costs provided to the Baseline Cost Estimate are reflective of this logic.

Relocation Assistance Benefits - One factor used in the disposal site selection process was an attempt to minimize impacts to the study area by maximizing use of identified disposal sites which offer sufficient capacity at minimal cost. This effort included minimizing usage of any improved property. This is evidenced by the fact that of the 33 upland disposal sites identified in each disposal alternative; there is only one site, which is common to both plans, on which P.L. 91-646 relocation assistance benefits are identified as a cost. That site is identified in both alternatives as disposal site W-44.0 and $35,000 of relocation benefits has been estimated and included in each respective cost estimate. This site contains 2 dwellings and their associated outbuildings which are directly affected by the placement of dredge material. Although the alternatives differ as to disposal site design, in either case both owner-occupied dwellings are rendered either uninhabitable or are removed to allow for the disposal activity. The associated mitigation plans for the disposal alternatives also were developed with an attempt to minimize the use of improved properties. The mitigation plan identified for least cost disposal alternative identified two sites on which P. L. 91-646 relocation benefits are identified as a cost. The sites are Sauvie 94 and Woodland Bottoms. The Sauvie 94 site contains 2 owner-occupied rural residential dwellings and associated outbuildings. The woodland Bottoms site includes a barn. Acquisition of fee estate interest is a project

requirement of all mitigation sites and a total of $30,000 of relocation benefits has been estimated . The sponsor's preferred disposal alternative's mitigation plan identified only one site where relocation benefits are required. That site is the same Woodland Bottoms site referenced above and upon which a barn is located. A total of $5,000 of relocation benefits has been estimated. Adequate replacement housing exists within the study area in general and at both locations which require the acquisition of dwellings. It should also be noted that the need for last resort housing benefits is not required for the subject acquisitions.

Local Sponsorship - A bi-state coalition of Lower Columbia River ports has been identified as the legal entity to act as local sponsor for the proposed 43-foot deep Columbia and Lower Willamette Rivers navigation channel in Oregon and Washington. This organization currently does not exist, but is a concept developed by a study sponsor (Port of Portland) in an effort to identify a legally constituted public body (one) with full authority and capability to perform all terms and conditions required of the local sponsor in a PCA for commercial navigation harbor projects. Of particular concern, given the subject project's requirement for LERRD acquisition in two states, is identifying local sponsorship which has the legal ability to acquire and hold title to real property interests in both states along full length of channel, including the power of eminent domain. This type of fully-capable local sponsorship is a feature the existing authorized 40-foot navigation project has not historically enjoyed, and that shortcoming has at times been somewhat of a limiting factor in the project's operation and maintenance. The Lower Columbia River ports which are identified as members of the coalition include the Port of Portland, Port of Vancouver, Port of Woodland, Port of Kalama, Port of Longview, Port of Wahkiakum County No. 1 and Port of Wahkiakum County No. 2. Several of the Lower Columbia River ports have extensive real estate acquisition experience and are fully capable of performing real property acquisition, but none have the power of eminent domain in both states. The bi-state coalition, as proposed, would have all those collective rights and power. As the proposed coalition of Lower Columbia River Ports does not currently exist, no Real Estate Division Checklist which is an "assessment of non-Federal sponsors real estate acquisition capability" has been completed for this hypothetical entity. The ports have been advised of P.L. 91-646 requirements and documenting credit expenses.

It should also be noted the local sponsorship for the currently existing authorized 40-foot navigation channel project is comprised of a different mix of legal entities with different responsibilities than those proposed for the subject 43-foot deep channel project. Thus, it is imperative that any legislation amending the existing authorization to authorize deepening of the channel needs to address the issues as to who will and who will not remain involved with sponsorship responsibilities and provide appropriate specification as to the nature and extent of responsibilities.

Attitudes of Landowners - The Corp's traditional public involvement and coordination approach has been far surpassed for this feasibility study. Both the Corps and sponsoring ports sought information, comments and assistance from Federal, state and local agencies, the maritime community, local interest groups, and individuals interested in or affected by the proposed project. A series of public workshops have been presented that provided an opportunity for study personnel to share data, information and study progress with the public. The first series of public workshops were held on November 1st and 3rd , 1994, in Portland and Longview, respectively. The purpose of the workshops was to explain the elements of the feasibility study and to gather scoping comments from the public early in the planning process. A second series of public workshops were held January 14th , 16th , and 22nd , 1997, in Kelso, Astoria, and Portland, respectively. The purpose of these workshops was to update the public on the study progress and to talk to proposed affected landowners. A third series of public workshops are planned after release of the draft feasibility report and integrated EIS for public review.

As previously noted within this REP, the majority of identified project ROW is owned by either public entities, principally the states of Washington and Oregon acting through their respective state agencies DNR and DSL, or by several of the Lower Columbia River ports. Naturally the affected Lower Columbia River ports are extremely strong supporters of the project and the majority of the state-owned sites have been historically used as disposal sites for the existing 40-foot navigation channel and their continued use as disposal sites has generally not been an issue for the state agencies. Through the series of public workshops the attempt was made to communicate with both public and private landowners within the study area to secure their help with the design of the dredge material disposal alternative. Many landowners expressed interest in receiving dredge material. Quite a few of the willing landowners offered sites which were judged unacceptable for project purposes due to either environmental or engineering screening criteria. However, some successful matching of the dredge material and disposal site identification did occur. There were also some interested landowners who expressed a strong desire not to have disposal material placed on either their ownership or adjacent lands. Where flexibility existed, the disposal site alternatives were adjusted. With only a couple exceptions in the least cost disposal plan, most affected landowners are not against the use of their properties as disposal sites. The one issue of concern most often expressed from the favorable landowners is the length of the long-term lease/temporary easement commitment. The mitigation sites identified for both disposal alternatives are all privately owned acreages and although numerous attempts were made to identify willing landowners, only mixed success was achieved. This mixed success is largely due to the length of this study and some identified mitigation acreage being either sold or under pending sale to new landowners. Currently only two sites are owned by landowners anxious to sell - and those two ownerships would preferably to sell now.

Real Estate Acquisition Activities/Milestones - The following are proposed milestones for project implementation. These scheduled milestones apply to the implementation of either the least cost disposal alternative or the sponsor's preferred disposal alternative. Scheduled milestone dates for both the initiation and completion of real estate acquisition of long term lease/temporary easement interests for DMMP identified disposal sites have been included in the subject project schedule because 16 of the identified upland sites in the DMMP are in common with those identified in both disposal alternatives and the early completion of their acquisition is critical to the subject project's accelerated real estate acquisition program. Upon execution of the PCA, the local sponsor and Corps real estate staff will meet to coordinate a detailed real estate acquisition schedule for all remaining real estate tasks as the first item of business for project's formal acquisition program.

Activity	Date Completed
Record of Decision for DMMP	01 Oct 1998
Initiate RE Acquisition of DMMP Identified Disposal Sites (16 upland sites in common with least cost & sponsor's preferred alternatives)	01 Oct 1998
Initiate Pre-construction, Engineering & Design	01 Mar 1999
Complete RE Acquisition of DMMP Identified Disposal Sites	01 Nov 1999
Sponsor Initiates Prelim. RE Activities	01 Nov 1999
Project Authorization	01 Sept 2000
Execute PCA	01 Nov 2000
Initiate Formal RE Acquisition Program	01 Nov 2000
Complete Formal RE Acquisition	01 Sept 2001
Advertise Construction Contracts	01 Sept 2001
Award Construction Contracts	01 Nov 2001

In the judgment of the Portland District Real Estate staff, the above identified real estate acquisition schedule is most aggressive in nature and encompasses a substantial amount of risk given what is known about the proposed subject project acquisitions. The sponsor (Lower Columbia River ports) has indicated a willingness to start the real estate acquisition process after the record-of-decision is made regarding the DMMP (Scheduled for Sept 1998). The Lower Columbia River ports have been informed of and understand that without project authorization and execution of the PCA, they run the risk that any expenditures they make may not be reimbursed by the Federal Government.

Real Estate Input to Baseline Cost Estimate - The real estate cost estimate for both the least cost disposal alternative and the sponsor's preferred disposal alternative are presented separate from the corresponding real estate cost estimate presented for their respective environmental mitigation features, as separate construction contracts will be used.

LEAST COST DISPOSAL ALTERNATIVE (Dredging Contract)

ESTIMATE OF REAL ESTATE COST

(a) Real Property Valuation:	
Lands and Improvements -	$ 13,305,000
Severance -	135,000
Contingencies -	705,000
Total Real Property Value	$ 14,145,000
(b) Acquisition Cost:	
Local Sponsor's Cost -	375,000
Fed. Asst. & Monitoring Cost -	185,000
(c) P.L. 91-646, As Amended, Relocation Costs:	35,000
Total Estimated Real Estate Cost	$ 14,740,000

LEAST COST DISPOSAL ALTERNATIVE (Mitigation Contract)

ESTIMATE OF REAL ESTATE COST

(a) Real Property Valuation:	
Lands and Improvements -	$ 3,268,000
Severance -	10,000
Contingencies -	312,000
Total Real Property Value	$ 3,590,000
(b) Acquisition Cost:	
Local Sponsor's Cost -	75,000
Fed. Asst. & Monitoring Cost -	40,000
(c) P.L. 91-646, As Amended, Relocation Costs:	30,000
Total Estimated Real Estate Cost	$ 3,735,000

SPONSOR'S PREFERRED DISPOSAL ALTERNATIVE (Dredging Contract)

ESTIMATE OF REAL ESTATE COST

(a) Real Property Valuation:	
Lands and Improvements -	$ 14,950,000
Severance -	28,000
Contingencies -	780,000
Total Real Property Value	$ 15,758,000
(b) Acquisition Cost:	
Local Sponsor's Cost -	387,000
Fed. Asst. & Monitoring Cost -	185,000
(c) P.L. 91-646, As Amended, Relocation Costs:	35,000
Total Estimated Real Estate Cost	$ 16,365,000

SPONSOR'S PREFERRED DISPOSAL ALTERNATIVE (Mitigation Contract)

ESTIMATE OF REAL ESTATE COST

(a) Real Property Valuation:	
Lands and Improvements -	$ 2,030,000
Severance -	0
Contingencies -	250,000
Total Real Property Value	$ 2,280,000
(b) Acquisition Cost:	
Local Sponsor's Cost -	55,000
Fed. Asst. & Monitoring Cost -	30,000
(c) P.L. 91-646, As Amended, Relocation Costs:	5,000
Total Estimated Real Estate Cost	$ 2,370,000